

Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: HALO COMMERCIAL

Report Number: P776610

Luminaire Tested: HCDJBS4050CSD-HCD4TRMB-5000lm-2700K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P776610
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2310613A001)
Test Lab:
Issue Date: 2/7/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBS4050CSD-HCD4TRMB-5000lm-2700K
Description: 4 INCH ROUND MEDIUM MATTE BLACK TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 2700K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2886.9 lumens
Efficiency: N/A
Efficacy: 60.1 lumens/watt
Spacing Criteria (0/90/45): 0.95 / 0.95 / 0.94
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

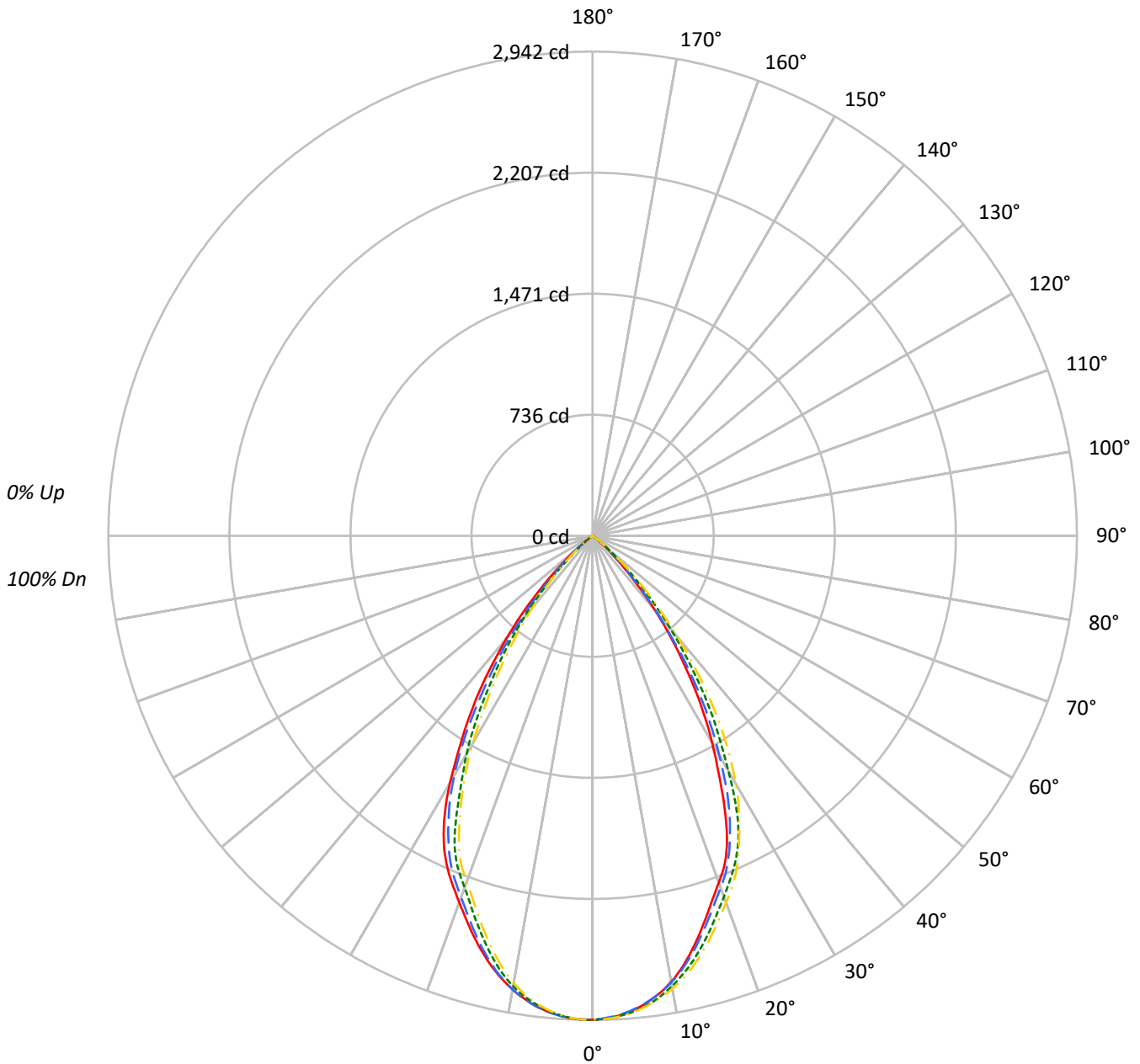
Input Watts (W): 48
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20										
RC	80					70					50					30					10					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100								
1	113	111	108	106	111	108	106	104	104	103	101	101	99	98	97	96	95	93								
2	108	103	98	95	105	101	97	94	98	95	92	95	92	90	92	90	88	86								
3	102	95	90	86	100	94	89	85	91	87	84	89	86	83	87	84	82	80								
4	97	89	83	79	95	88	82	78	85	81	77	83	80	76	82	78	76	74								
5	91	83	77	72	90	82	76	72	80	75	71	78	74	71	77	73	70	69								
6	87	77	71	67	85	77	71	67	75	70	66	74	69	66	72	68	65	64								
7	82	72	66	62	81	72	66	62	70	65	61	69	65	61	68	64	61	59								
8	78	68	62	58	77	67	62	57	66	61	57	65	60	57	64	60	57	55								
9	74	64	58	54	73	63	58	54	62	57	53	62	57	53	61	56	53	52								
10	70	60	54	50	69	60	54	50	59	54	50	58	53	50	57	53	50	48								

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	370074	370074	370074	370074
5°	365209	366472	367571	366876
10°	351554	355042	357726	355157
15°	326466	335495	340003	331690
20°	300290	312370	317326	304683
25°	266653	289565	295272	274887
30°	211017	239442	251692	222338
35°	153388	182256	194086	163405
40°	96025	120355	133547	105537
45°	43409	64499	74324	49585
50°	12589	19735	25707	14821
55°	1997	1997	2699	2501
60°	805	805	906	805
65°	536	536	536	536
70°	331	515	515	515
75°	243	438	243	438
80°	0	362	362	362
85°	0	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 180°

Vertical Angle: 45°

Luminance: 74324 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	273.0	9.5
10°-20°	716.1	24.8
20°-30°	913.9	31.7
30°-40°	698.7	24.2
40°-50°	261.1	9.0
50°-60°	21.3	0.7
60°-70°	2.0	0.1
70°-80°	0.8	0.0
80°-90°	0.1	0.0
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1902.9	65.9
0°-40°	2601.6	90.1
0°-60°	2884.0	99.9
0°-90°	2886.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2886.9	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2941	2941	2941	2941	2941	
5°	2891	2901	2910	2904	2891	272
15°	2506	2575	2610	2546	2506	701
25°	1920	2085	2126	1980	1920	864
35°	998	1186	1263	1064	998	622
45°	244	362	418	279	244	205
55°	9	9	12	11	9	15
65°	2	2	2	2	2	2
75°	0	1	0	1	0	1
85°	0	0	0	0	0	0
90°	0	0	0	0	0	0



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2940.6	2940.6	2940.6	2940.6	2940.6	2940.6	2940.6	2940.6	2940.6	2940.6	2940.6
0.5°	2939.7	2937.4	2937.4	2937.4	2939.7	2940.2	2941.5	2942.4	2941.1	2939.7	2939.7
1°	2937.9	2935.6	2935.1	2935.6	2937.9	2938.8	2940.2	2941.1	2940.6	2939.7	2939.2
1.5°	2935.1	2932.4	2931.9	2932.4	2935.6	2937.0	2938.3	2939.7	2938.8	2938.3	2938.8
2°	2931.5	2928.8	2927.8	2928.8	2932.9	2934.2	2935.6	2937.0	2937.0	2936.5	2937.0
2.5°	2926.9	2923.7	2923.3	2924.7	2929.2	2930.6	2931.9	2933.8	2934.2	2933.8	2934.2
3°	2921.5	2918.3	2917.8	2919.6	2924.7	2926.5	2927.8	2929.7	2930.6	2930.6	2931.0
3.5°	2915.1	2911.4	2911.9	2914.2	2919.6	2921.5	2923.3	2925.1	2926.5	2926.9	2926.9
4°	2907.8	2904.6	2904.6	2907.3	2914.2	2916.0	2917.4	2919.6	2921.5	2922.4	2922.4
4.5°	2899.6	2896.4	2896.8	2900.5	2908.2	2910.1	2911.4	2913.7	2916.0	2916.9	2916.9
5°	2890.9	2887.3	2887.7	2892.3	2900.9	2902.8	2904.1	2906.9	2909.6	2911.0	2910.5
5.5°	2880.9	2876.8	2878.6	2883.2	2892.7	2894.6	2896.4	2899.1	2902.3	2903.7	2902.8
6°	2870.4	2866.3	2868.1	2873.6	2884.1	2885.9	2887.7	2890.9	2894.6	2895.9	2894.6
6.5°	2859.0	2855.4	2857.6	2863.1	2874.0	2876.8	2878.6	2881.8	2885.9	2887.3	2885.9
7°	2846.7	2843.0	2845.8	2851.3	2863.1	2866.3	2868.6	2872.2	2875.9	2877.7	2876.3
7.5°	2833.5	2830.3	2832.6	2838.5	2851.3	2854.9	2858.1	2861.3	2864.9	2867.2	2865.8
8°	2819.3	2816.6	2818.9	2825.3	2838.5	2842.6	2846.7	2850.3	2854.0	2855.4	2854.0
8.5°	2803.8	2802.0	2804.8	2810.7	2824.8	2829.4	2834.8	2838.0	2841.2	2843.5	2841.7
9°	2787.4	2786.1	2789.2	2795.2	2810.2	2816.1	2822.1	2825.3	2828.5	2829.8	2828.5
9.5°	2769.2	2769.2	2772.8	2779.2	2794.7	2801.6	2808.4	2812.5	2814.3	2815.7	2814.3
10°	2751.0	2751.0	2755.1	2761.9	2778.3	2786.5	2793.8	2797.9	2799.3	2800.2	2798.8
10.5°	2731.8	2731.8	2736.4	2744.1	2762.4	2770.1	2778.3	2782.9	2783.8	2784.2	2782.4
11°	2709.9	2710.8	2716.8	2724.5	2744.1	2753.2	2762.4	2766.9	2767.8	2767.4	2765.1
11.5°	2687.6	2689.4	2696.2	2704.5	2725.4	2735.9	2745.9	2750.0	2750.0	2749.6	2746.4
12°	2663.9	2666.6	2674.4	2683.5	2706.7	2717.7	2728.2	2732.7	2732.7	2730.9	2727.7
12.5°	2639.3	2642.4	2651.1	2662.1	2686.2	2698.1	2709.5	2714.5	2714.0	2711.3	2707.6
13°	2613.7	2617.8	2627.9	2639.7	2665.2	2678.0	2690.8	2695.8	2694.4	2690.8	2685.3
13.5°	2587.3	2592.8	2603.2	2616.0	2644.3	2657.5	2670.3	2675.3	2674.4	2670.3	2663.9
14°	2560.4	2566.8	2579.1	2592.8	2621.0	2636.5	2649.3	2655.2	2653.4	2647.9	2640.6
14.5°	2533.0	2540.3	2553.5	2568.6	2598.2	2614.6	2627.4	2633.3	2631.5	2625.6	2616.5
15°	2505.7	2513.4	2527.6	2543.5	2575.0	2591.8	2605.5	2611.4	2609.6	2602.3	2592.3
15.5°	2477.4	2486.5	2501.1	2518.9	2551.7	2568.6	2583.2	2588.6	2586.8	2579.1	2567.2
16°	2449.1	2459.2	2475.6	2493.4	2527.1	2545.8	2560.4	2565.9	2563.6	2554.9	2542.1
16.5°	2421.8	2432.7	2449.6	2468.3	2502.9	2522.1	2536.2	2543.5	2540.3	2530.7	2516.6
17°	2394.4	2405.4	2423.2	2443.2	2478.3	2497.9	2513.0	2519.4	2516.2	2505.7	2491.1
17.5°	2367.1	2378.5	2397.2	2418.1	2453.2	2473.3	2488.3	2494.3	2491.5	2480.6	2464.6
18°	2339.7	2352.0	2371.2	2392.6	2428.6	2449.1	2464.2	2471.0	2466.9	2455.5	2439.1
18.5°	2313.3	2327.0	2345.7	2367.5	2403.6	2425.0	2440.5	2446.4	2441.8	2430.0	2412.7
19°	2288.7	2302.8	2322.4	2343.4	2379.4	2401.3	2416.3	2422.2	2417.2	2404.9	2386.7
19.5°	2265.4	2280.0	2298.7	2320.1	2356.1	2377.6	2393.5	2399.0	2394.0	2379.8	2361.2
20°	2242.2	2257.2	2275.9	2297.3	2332.4	2354.3	2371.6	2376.2	2369.4	2356.1	2337.0
20.5°	2219.4	2234.0	2253.1	2274.1	2309.6	2332.0	2348.8	2353.9	2347.0	2332.4	2313.3
21°	2196.1	2211.2	2229.4	2250.8	2286.8	2309.6	2325.6	2331.5	2324.2	2309.6	2290.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
22.5°	2114.5	2128.6	2146.4	2174.7	2217.5	2239.9	2254.5	2261.3	2255.8	2240.8	2218.9
23°	2081.7	2096.3	2115.0	2148.2	2193.4	2214.8	2227.6	2235.8	2232.6	2216.6	2192.9
23.5°	2046.1	2061.6	2082.1	2118.2	2168.3	2187.9	2197.9	2207.1	2207.5	2192.0	2165.1
24°	2006.5	2022.9	2047.5	2086.7	2142.8	2159.2	2166.5	2177.9	2181.5	2166.5	2135.9
24.5°	1964.5	1980.9	2010.6	2053.4	2115.0	2130.0	2135.0	2146.4	2154.6	2139.1	2104.0
25°	1920.3	1936.2	1974.5	2019.7	2085.3	2098.5	2101.7	2114.0	2126.4	2111.3	2071.2
25.5°	1873.8	1890.7	1936.7	1982.7	2054.3	2065.3	2066.2	2079.9	2096.3	2081.2	2037.0
26°	1825.5	1844.2	1898.9	1947.2	2020.6	2030.2	2031.5	2045.2	2063.9	2049.8	2002.4
26.5°	1776.2	1797.6	1857.8	1909.8	1983.7	1993.7	1997.3	2010.1	2029.2	2015.6	1965.4
27°	1726.5	1752.1	1816.3	1871.0	1944.0	1956.8	1963.1	1975.0	1992.3	1978.2	1928.5
27.5°	1679.1	1706.9	1773.0	1831.4	1900.2	1918.9	1928.5	1939.4	1954.5	1939.4	1892.0
28°	1631.2	1664.1	1727.4	1789.0	1854.2	1880.2	1892.9	1903.9	1912.5	1897.9	1852.8
28.5°	1584.7	1622.6	1680.9	1744.3	1804.0	1839.1	1857.4	1867.4	1870.1	1855.5	1813.1
29°	1540.1	1581.5	1634.0	1698.7	1753.0	1797.6	1820.9	1830.5	1826.8	1809.0	1771.7
29.5°	1495.8	1540.1	1585.7	1650.4	1700.5	1754.3	1781.2	1790.8	1779.4	1761.6	1727.9
30°	1452.1	1497.7	1537.8	1599.8	1647.7	1708.7	1740.2	1751.1	1732.0	1712.4	1681.4
30.5°	1408.8	1453.9	1491.7	1546.9	1597.5	1661.8	1696.9	1708.3	1681.4	1660.9	1634.9
31°	1364.5	1408.8	1444.8	1495.4	1548.7	1613.5	1654.5	1666.3	1632.2	1609.4	1586.6
31.5°	1320.3	1362.3	1399.6	1441.1	1501.8	1564.7	1610.3	1620.8	1582.9	1557.4	1538.2
32°	1275.6	1315.3	1353.1	1388.2	1457.5	1515.0	1567.0	1575.2	1536.0	1507.2	1487.2
32.5°	1231.0	1265.6	1307.1	1336.7	1412.4	1466.2	1523.2	1527.3	1488.5	1458.5	1438.4
33°	1184.5	1216.8	1260.1	1283.8	1369.5	1417.9	1478.5	1480.3	1443.4	1410.1	1386.4
33.5°	1137.0	1168.0	1212.7	1231.9	1324.0	1370.0	1432.0	1432.9	1396.9	1362.7	1334.0
34°	1090.1	1121.5	1163.9	1181.3	1278.4	1324.4	1386.0	1385.5	1353.6	1315.8	1280.6
34.5°	1044.5	1073.2	1115.6	1132.0	1231.4	1279.7	1338.1	1336.3	1308.0	1270.2	1230.0
35°	998.4	1028.1	1067.3	1083.2	1186.3	1236.9	1290.2	1288.9	1263.3	1225.0	1177.6
35.5°	955.1	984.8	1017.6	1035.8	1136.1	1192.2	1239.6	1241.0	1217.7	1179.4	1128.4
36°	912.3	941.0	967.9	989.8	1087.8	1147.1	1189.9	1193.1	1174.0	1133.4	1080.5
36.5°	870.3	898.1	919.6	944.6	1040.4	1102.8	1139.3	1144.8	1127.0	1086.4	1034.0
37°	828.8	854.4	869.0	900.0	993.9	1058.6	1089.6	1095.5	1080.5	1038.6	987.0
37.5°	787.8	812.0	820.2	856.2	947.4	1012.6	1039.5	1049.0	1033.5	991.1	943.3
38°	746.8	768.2	772.3	812.0	903.6	966.1	993.0	1003.0	987.5	943.7	898.6
38.5°	705.7	724.9	727.6	769.1	859.8	919.1	945.1	957.9	942.8	897.2	854.4
39°	665.6	682.5	684.8	727.2	818.4	873.5	898.1	912.7	899.1	854.8	810.6
39.5°	624.1	638.3	641.9	688.0	774.6	827.9	851.6	868.1	855.3	808.8	767.8
40°	584.5	595.9	600.0	646.9	732.6	784.2	805.1	822.5	812.9	766.4	724.9
40.5°	544.8	554.4	561.7	608.6	691.6	740.9	759.1	778.2	770.0	725.8	682.5
41°	506.1	514.3	523.4	570.8	651.5	699.4	714.9	733.6	730.4	687.5	639.6
41.5°	467.8	475.5	486.5	533.4	610.0	657.4	672.0	688.4	689.3	646.9	599.1
42°	432.7	437.2	450.4	495.6	569.4	617.3	629.6	645.1	646.9	609.5	558.5
42.5°	397.6	401.7	416.7	461.4	531.1	577.2	588.1	603.6	606.4	571.7	520.2
43°	364.7	367.0	383.0	427.2	494.2	537.1	547.5	563.0	567.2	536.6	483.3
43.5°	331.9	333.7	352.0	393.4	458.6	496.5	509.7	523.4	527.5	498.3	447.7



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	243.9	241.6	264.9	300.0	362.4	385.2	403.5	414.9	417.6	399.4	352.0
45.5°	217.5	214.7	239.8	271.7	330.5	348.8	369.3	380.7	383.4	367.0	320.0
46°	192.8	190.1	215.6	244.8	298.6	312.3	335.1	346.5	349.2	334.6	291.3
46.5°	169.1	166.9	193.3	220.2	269.0	280.4	301.4	312.8	315.0	302.7	264.4
47°	152.3	150.4	171.4	196.5	240.3	250.3	270.8	280.8	283.1	273.1	238.4
47.5°	135.9	133.6	154.6	173.7	212.9	222.0	241.6	251.2	254.4	245.7	214.3
48°	119.4	116.7	137.7	152.3	186.9	196.0	215.2	222.9	226.6	219.7	191.9
48.5°	103.0	100.3	120.8	133.6	162.8	171.4	189.7	197.0	200.6	193.3	171.0
49°	86.6	83.4	103.9	117.6	140.0	149.5	165.5	171.9	175.5	169.6	150.9
49.5°	75.2	72.5	87.1	103.0	119.0	129.0	143.2	149.1	152.7	147.7	132.7
50°	64.3	62.0	73.9	88.4	100.8	110.3	122.2	128.6	131.3	127.2	115.8
50.5°	54.7	52.9	62.0	73.9	84.3	93.5	103.5	109.9	112.2	109.0	99.8
51°	46.0	44.2	51.1	59.3	69.8	78.0	86.2	92.5	94.4	91.6	85.7
51.5°	37.8	36.5	41.5	48.3	60.6	64.3	71.1	76.6	78.4	77.0	72.5
52°	31.0	29.6	32.8	38.3	51.5	54.7	60.6	62.9	64.3	63.8	60.6
52.5°	24.6	23.3	25.5	29.2	42.4	45.6	50.1	53.8	54.7	54.7	52.0
53°	18.7	17.8	19.1	21.9	33.3	36.0	40.1	44.2	45.6	45.1	43.3
53.5°	16.4	15.5	16.9	16.0	24.2	26.4	29.6	35.1	36.0	36.0	34.6
54°	14.1	12.8	14.1	13.2	15.0	17.3	19.6	25.5	26.4	26.9	25.5
54.5°	11.9	10.0	11.9	11.4	10.9	12.3	13.7	16.4	17.3	17.3	17.3
55°	9.1	7.8	9.1	9.1	9.1	9.6	10.5	11.9	12.3	12.8	12.8
55.5°	6.8	6.8	6.8	7.3	7.8	8.2	8.7	9.1	9.6	10.0	9.6
56°	6.4	5.9	5.9	6.4	6.8	7.3	7.3	7.8	8.2	8.2	8.2
56.5°	5.5	5.5	5.5	5.5	5.9	6.4	6.8	6.8	7.3	7.3	7.3
57°	5.0	5.0	5.0	5.0	5.5	5.5	5.9	6.4	6.4	6.4	6.4
57.5°	4.6	4.6	4.6	4.6	5.0	5.0	5.5	5.5	5.9	5.9	5.9
58°	4.1	4.1	4.1	4.1	4.6	4.6	4.6	5.0	5.0	5.0	5.0
58.5°	3.6	3.6	3.6	3.6	4.1	4.1	4.1	4.6	4.6	4.6	4.6
59°	3.6	3.6	3.6	3.6	3.6	3.6	4.1	4.1	4.1	4.1	4.1
59.5°	3.2	3.2	3.2	3.2	3.2	3.6	3.6	3.6	3.6	3.6	3.6
60°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.6	3.6	3.6	3.6
60.5°	2.7	2.7	2.7	2.7	3.2	3.2	3.2	3.2	3.2	3.2	3.2
61°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	3.2	3.2	3.2	3.2
61.5°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
62°	2.3	2.3	2.3	2.3	2.3	2.7	2.7	2.7	2.7	2.7	2.7
62.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.7	2.7
63°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
63.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
64°	1.8	1.8	1.8	1.8	1.8	2.3	2.3	2.3	2.3	2.3	2.3
64.5°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.3
65°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
65.5°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
66°	1.4	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8



TEST NUMBER: P776610

CATALOG NUMBER: HCDJBL54050CSD-HCD4TRMB-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
68°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
68.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
69°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
69.5°	0.9	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
70°	0.9	0.9	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
70.5°	0.9	0.9	0.9	0.9	1.4	1.4	1.4	0.9	0.9	0.9	1.4
71°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.4
71.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
72°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
72.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
73°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
73.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
74°	0.5	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
74.5°	0.5	0.5	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
75°	0.5	0.5	0.5	0.9	0.9	0.9	0.9	0.5	0.5	0.5	0.9
75.5°	0.5	0.5	0.5	0.5	0.9	0.9	0.9	0.5	0.5	0.5	0.9
76°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
76.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
77°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
77.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
78°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
78.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
79°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
79.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
80°	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
80.5°	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
81°	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.5
81.5°	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.5
82°	0.0	0.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.5
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
84°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
84.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
86°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
86.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
88°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
88.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776610

CATALOG NUMBER: HCDJBL54050CSD-HCD4TRMB-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776610

CATALOG NUMBER: HCDJBL54050CSD-HCD4TRMB-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2940.6	2940.6	2940.6	2940.6	2940.6	2940.6
0.5°	2939.7	2940.6	2941.1	2941.5	2941.5	2939.7
1°	2939.7	2940.2	2940.2	2940.6	2940.2	2937.9
1.5°	2938.8	2938.8	2938.8	2938.8	2937.9	2935.1
2°	2937.0	2936.5	2936.5	2936.1	2934.2	2931.5
2.5°	2934.2	2933.3	2932.9	2932.4	2930.1	2926.9
3°	2931.0	2929.2	2928.8	2927.8	2925.6	2921.5
3.5°	2926.5	2924.2	2923.7	2922.4	2919.2	2915.1
4°	2921.0	2918.3	2917.8	2916.0	2912.3	2907.8
4.5°	2915.1	2911.4	2910.5	2908.7	2905.1	2899.6
5°	2908.7	2904.1	2902.3	2900.0	2896.4	2890.9
5.5°	2900.9	2895.5	2893.2	2890.9	2885.9	2880.9
6°	2892.3	2885.9	2883.6	2880.4	2875.9	2870.4
6.5°	2883.2	2875.9	2873.1	2869.5	2864.5	2859.0
7°	2873.1	2864.9	2861.3	2857.2	2851.3	2846.7
7.5°	2862.2	2853.1	2848.5	2843.5	2837.6	2833.5
8°	2850.8	2840.3	2834.8	2828.9	2823.9	2819.3
8.5°	2838.0	2826.6	2820.3	2813.4	2807.9	2803.8
9°	2824.4	2812.0	2804.3	2796.5	2791.1	2787.4
9.5°	2809.8	2796.1	2787.4	2778.3	2771.9	2769.2
10°	2794.3	2779.2	2769.2	2759.6	2753.7	2751.0
10.5°	2777.4	2761.4	2749.6	2739.1	2733.6	2731.8
11°	2760.1	2742.3	2729.1	2717.7	2711.7	2709.9
11.5°	2741.4	2721.3	2707.2	2694.9	2688.5	2687.6
12°	2720.9	2699.9	2683.9	2670.7	2664.3	2663.9
12.5°	2699.9	2676.2	2659.3	2645.6	2639.3	2639.3
13°	2678.0	2651.6	2634.2	2620.1	2613.3	2613.7
13.5°	2654.3	2626.5	2607.8	2592.8	2587.3	2587.3
14°	2629.7	2600.5	2580.9	2565.4	2558.6	2560.4
14.5°	2604.6	2573.1	2553.1	2538.0	2530.7	2533.0
15°	2579.1	2545.8	2524.8	2509.8	2502.9	2505.7
15.5°	2552.6	2518.4	2496.6	2481.5	2474.7	2477.4
16°	2526.2	2490.2	2468.3	2451.9	2446.4	2449.1
16.5°	2499.3	2462.8	2440.0	2423.6	2418.1	2421.8
17°	2471.9	2435.0	2410.8	2394.9	2389.4	2394.4
17.5°	2444.6	2406.7	2382.6	2367.1	2361.6	2367.1
18°	2417.7	2378.5	2354.8	2338.4	2334.3	2339.7
18.5°	2390.8	2351.6	2326.5	2310.5	2306.9	2313.3
19°	2363.9	2324.2	2299.6	2284.1	2281.4	2288.7
19.5°	2338.4	2299.1	2275.4	2259.9	2256.7	2265.4
20°	2313.7	2275.0	2250.4	2236.2	2233.0	2242.2
20.5°	2290.0	2251.7	2227.1	2212.5	2210.2	2219.4
21°	2266.3	2228.5	2203.0	2188.4	2187.4	2196.1



TEST NUMBER: P776610

CATALOG NUMBER: HCDJBL54050CSD-HCD4TRMB-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2194.7	2156.0	2127.3	2109.0	2104.5	2114.5
23°	2166.5	2127.3	2096.3	2074.8	2070.3	2081.7
23.5°	2137.3	2095.8	2063.0	2037.9	2035.2	2046.1
24°	2105.4	2060.3	2024.7	1997.3	1995.5	2006.5
24.5°	2071.6	2021.5	1986.8	1955.4	1953.6	1964.5
25°	2035.6	1979.6	1944.9	1911.2	1910.3	1920.3
25.5°	1998.7	1934.4	1901.6	1867.9	1866.5	1873.8
26°	1959.5	1887.0	1855.1	1825.5	1820.0	1825.5
26.5°	1918.9	1837.3	1808.6	1782.6	1774.9	1776.2
27°	1877.4	1789.4	1758.9	1740.7	1728.8	1726.5
27.5°	1833.7	1742.0	1706.5	1696.0	1681.8	1679.1
28°	1789.0	1697.8	1655.9	1651.3	1635.3	1631.2
28.5°	1744.3	1654.5	1606.6	1604.8	1588.8	1584.7
29°	1698.3	1612.5	1559.2	1556.5	1540.5	1540.1
29.5°	1652.2	1572.0	1513.2	1506.3	1492.6	1495.8
30°	1607.5	1530.0	1467.6	1456.2	1443.4	1452.1
30.5°	1561.9	1486.7	1423.3	1404.2	1393.3	1408.8
31°	1517.7	1442.5	1379.1	1351.8	1344.0	1364.5
31.5°	1474.9	1395.5	1334.9	1302.1	1293.9	1320.3
32°	1431.1	1347.7	1289.8	1252.4	1246.5	1275.6
32.5°	1387.8	1299.3	1245.5	1203.6	1200.9	1231.0
33°	1344.5	1250.1	1200.0	1156.6	1155.7	1184.5
33.5°	1301.2	1200.9	1153.9	1108.8	1111.0	1137.0
34°	1255.1	1153.4	1107.9	1062.3	1066.4	1090.1
34.5°	1208.6	1108.3	1060.4	1015.8	1021.2	1044.5
35°	1159.8	1063.6	1014.4	969.3	976.1	998.4
35.5°	1112.9	1021.7	970.2	923.2	931.0	955.1
36°	1060.9	981.1	926.0	879.4	885.4	912.3
36.5°	1012.1	939.2	884.5	837.5	839.3	870.3
37°	962.0	898.1	842.1	796.0	795.1	828.8
37.5°	914.6	856.7	800.6	755.4	752.2	787.8
38°	866.7	813.3	759.5	715.3	710.8	746.8
38.5°	822.0	770.0	719.0	676.1	671.1	705.7
39°	776.4	727.6	680.2	638.7	633.7	665.6
39.5°	732.2	684.8	639.6	600.4	596.8	624.1
40°	688.0	642.4	600.9	564.9	560.8	584.5
40.5°	646.5	601.3	563.0	528.9	525.2	544.8
41°	604.1	562.6	525.7	495.1	491.9	506.1
41.5°	563.5	523.8	489.6	462.7	458.2	467.8
42°	523.8	487.4	454.5	432.7	426.3	432.7
42.5°	485.1	450.9	420.8	402.1	395.3	397.6
43°	447.7	415.8	388.4	373.8	366.1	364.7
43.5°	414.4	379.3	357.9	345.6	336.9	331.9



TEST NUMBER: P776610

CATALOG NUMBER: HCDJBL54050CSD-HCD4TRMB-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	315.5	278.6	272.6	268.5	259.4	243.9
45.5°	286.3	248.0	246.6	244.8	235.7	217.5
46°	259.0	219.7	222.5	222.9	214.3	192.8
46.5°	233.0	193.3	199.2	202.0	192.8	169.1
47°	208.8	170.1	176.9	181.5	172.8	152.3
47.5°	186.5	153.2	156.4	162.8	156.4	135.9
48°	165.0	136.3	140.4	147.3	140.4	119.4
48.5°	145.9	119.9	124.0	131.8	124.0	103.0
49°	128.1	103.5	108.1	116.3	107.6	86.6
49.5°	111.7	87.1	92.1	100.8	91.2	75.2
50°	96.7	75.7	78.9	85.3	78.4	64.3
50.5°	83.4	65.7	67.5	72.5	65.7	54.7
51°	71.1	56.1	57.4	61.1	55.2	46.0
51.5°	60.6	47.9	47.9	50.6	45.6	37.8
52°	52.4	40.1	39.2	41.0	36.5	31.0
52.5°	44.7	32.8	31.9	32.4	28.7	24.6
53°	36.5	26.4	25.1	24.6	21.9	18.7
53.5°	28.7	20.5	19.1	18.2	16.0	16.4
54°	20.5	15.5	16.4	15.5	13.7	14.1
54.5°	15.5	13.2	14.1	12.8	11.4	11.9
55°	11.9	11.4	11.9	10.0	9.1	9.1
55.5°	9.1	9.1	9.1	7.3	7.3	6.8
56°	8.2	7.3	6.8	6.8	6.4	6.4
56.5°	6.8	6.4	5.9	5.9	5.9	5.5
57°	6.4	5.5	5.5	5.5	5.0	5.0
57.5°	5.5	5.0	5.0	5.0	4.6	4.6
58°	5.0	4.6	4.6	4.6	4.1	4.1
58.5°	4.6	4.1	4.1	4.1	4.1	3.6
59°	4.1	3.6	3.6	3.6	3.6	3.6
59.5°	3.6	3.6	3.6	3.6	3.2	3.2
60°	3.6	3.2	3.2	3.2	3.2	3.2
60.5°	3.2	3.2	3.2	3.2	3.2	2.7
61°	3.2	2.7	2.7	2.7	2.7	2.7
61.5°	2.7	2.7	2.7	2.7	2.7	2.7
62°	2.7	2.7	2.7	2.7	2.3	2.3
62.5°	2.7	2.3	2.3	2.3	2.3	2.3
63°	2.3	2.3	2.3	2.3	2.3	2.3
63.5°	2.3	2.3	2.3	2.3	2.3	2.3
64°	2.3	2.3	2.3	2.3	1.8	1.8
64.5°	2.3	1.8	1.8	1.8	1.8	1.8
65°	1.8	1.8	1.8	1.8	1.8	1.8
65.5°	1.8	1.8	1.8	1.8	1.8	1.8
66°	1.8	1.8	1.8	1.8	1.8	1.4



TEST NUMBER: P776610

CATALOG NUMBER: HCDJBL54050CSD-HCD4TRMB-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	1.4	1.4	1.4	1.4	1.4	1.4
68°	1.4	1.4	1.4	1.4	1.4	1.4
68.5°	1.4	1.4	1.4	1.4	1.4	1.4
69°	1.4	1.4	1.4	1.4	1.4	1.4
69.5°	1.4	1.4	1.4	1.4	1.4	0.9
70°	1.4	1.4	1.4	1.4	0.9	0.9
70.5°	1.4	1.4	1.4	0.9	0.9	0.9
71°	1.4	0.9	0.9	0.9	0.9	0.9
71.5°	0.9	0.9	0.9	0.9	0.9	0.9
72°	0.9	0.9	0.9	0.9	0.9	0.9
72.5°	0.9	0.9	0.9	0.9	0.9	0.9
73°	0.9	0.9	0.9	0.9	0.9	0.9
73.5°	0.9	0.9	0.9	0.9	0.9	0.9
74°	0.9	0.9	0.9	0.9	0.9	0.5
74.5°	0.9	0.9	0.9	0.9	0.5	0.5
75°	0.9	0.9	0.9	0.9	0.5	0.5
75.5°	0.9	0.9	0.9	0.5	0.5	0.5
76°	0.9	0.5	0.5	0.5	0.5	0.5
76.5°	0.5	0.5	0.5	0.5	0.5	0.5
77°	0.5	0.5	0.5	0.5	0.5	0.5
77.5°	0.5	0.5	0.5	0.5	0.5	0.5
78°	0.5	0.5	0.5	0.5	0.5	0.5
78.5°	0.5	0.5	0.5	0.5	0.5	0.5
79°	0.5	0.5	0.5	0.5	0.5	0.5
79.5°	0.5	0.5	0.5	0.5	0.5	0.5
80°	0.5	0.5	0.5	0.5	0.5	0.0
80.5°	0.5	0.5	0.5	0.5	0.0	0.0
81°	0.5	0.5	0.5	0.5	0.0	0.0
81.5°	0.5	0.5	0.5	0.5	0.0	0.0
82°	0.5	0.5	0.5	0.0	0.0	0.0
82.5°	0.5	0.0	0.0	0.0	0.0	0.0
83°	0.0	0.0	0.0	0.0	0.0	0.0
83.5°	0.0	0.0	0.0	0.0	0.0	0.0
84°	0.0	0.0	0.0	0.0	0.0	0.0
84.5°	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0
85.5°	0.0	0.0	0.0	0.0	0.0	0.0
86°	0.0	0.0	0.0	0.0	0.0	0.0
86.5°	0.0	0.0	0.0	0.0	0.0	0.0
87°	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0
88°	0.0	0.0	0.0	0.0	0.0	0.0
88.5°	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776610

CATALOG NUMBER: HCDJBL54050CSD-HCD4TRMB-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
90°	0.0	0.0	0.0	0.0	0.0	0.0



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Cooper Lighting Solutions Photometric Lab
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Scaled Data Report





— 0°-180° - - 45°-225° - - - - 90°-270° - · - 135°-315°

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21.5°	2171.9	2186.5	2203.9	2227.1	2264.0	2287.7	2304.6	2309.2	2301.4	2285.9	2266.8
22°	2144.6	2158.7	2176.1	2202.5	2241.2	2264.0	2280.5	2286.4	2279.1	2263.1	2244.0



44°	301.8	301.4	321.0	360.2	426.7	457.7	471.9	484.6	488.7	464.1	415.8
44.5°	270.8	270.8	292.2	330.1	394.8	421.3	437.7	449.1	451.8	431.7	383.9



66.5°	1.4	1.4	1.4	1.4	1.8	1.8	1.8	1.8	1.8	1.8	1.8
67°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.8



89°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
89.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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21.5°	2243.1	2205.7	2180.6	2166.0	2162.4	2171.9
22°	2220.3	2181.5	2154.6	2139.1	2135.0	2144.6



44°	381.6	344.7	328.3	318.7	309.6	301.8
44.5°	348.3	310.9	300.0	292.7	284.0	270.8

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66.5°	1.8	1.8	1.8	1.8	1.4	1.4
67°	1.8	1.8	1.4	1.4	1.4	1.4

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89°	0.0	0.0	0.0	0.0	0.0	0.0
89.5°	0.0	0.0	0.0	0.0	0.0	0.0

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(END OF REPORT)